

ARCS PROCEDURE:	MPL PULSE CALIBRATION (CALF)	PRO(MPL)-014.002
Author: C. Flynn		July 15, 1998 Page 1 of 3

MPL Pulse Calibration (CALF)

I. Purpose:

The purpose of this procedure is to describe the steps performed by the RESET team to field calibrate the pulse timing of the MPL at an ARCS site.

II. Cautions and Hazards:

- Do not open electronics chassis on the MPL or pulse generator without electronics safety training and due care with 110 V circuits.

III. Requirements:

- Calibrated pulse generator.
- 2 BNC cables.

IV. Procedure:

A. Steps:

1. Notify Data System that a calibration is in progress.
2. Turn MPL OFF.
3. Replace wire from computer sync on back of computer with first output of calibrated pulse generator (see diagram).
4. Replace wire from TTL data line on back of computer with second output of pulse generator (see Figure 1).
5. Turn MPL back ON.
6. Set amplitude of pulse generator to greater than 2.5 V and less than 5 V.
7. Set the pulse width on pulse generator to a 3 microseconds trigger with 15 nsec logic.
8. Set pulse delays to create pulses at ranges determined by the delay time multiplied by the speed of light divided by 2 (e.g., a 1 micro-second delay should give a pulse at 6.67 km on lidar display).
9. Observe pulses as strongly peaked returns at altitudes corresponding to delay times determined in step 8.
10. If the peak is within 10 m of the correct altitude, stop; if not, log difference and notify mentor.

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V. References:

1. Spinhirne, J. D., J. A. R. Rall and V. S. Scott: "Compact Eye Safe Lidar Systems," Rev. of Laser Engineering (submitted) 6p., 1995.
2. Gaffney, J. "MPL Instrument Manual", 1995.

VI. Attachments:

1. **Figure 1**, Diagram Showing Back of Computer and Location of Two lines Needed for Pulse Check

Figure 1.

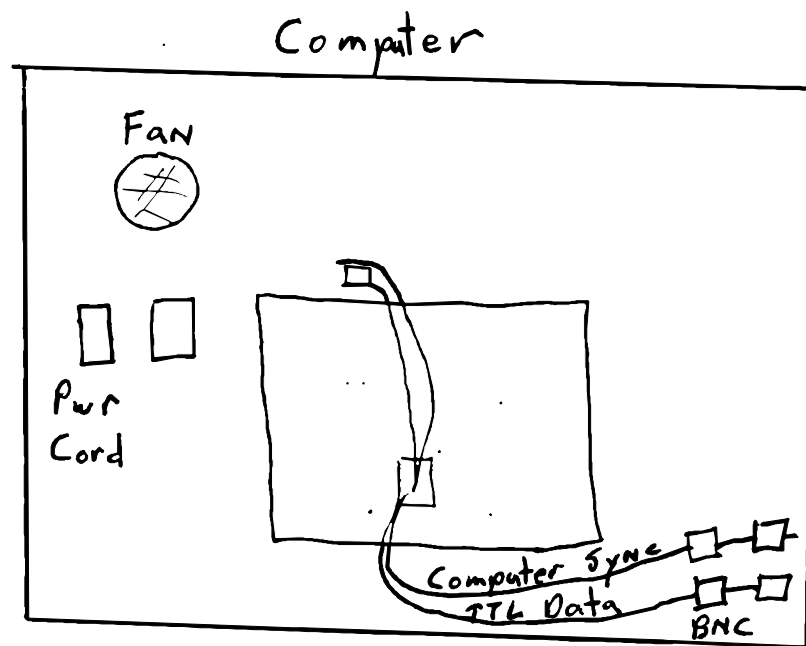


Diagram Showing Back of
Computer and Location of
Two Lines Needed for Pulse
Check.